REMARKS

Claims 1 through 7, 9 through 15, 17 through 21 and new Claim 22 are pending in the application.

Claim 1 has been amended to reflect advantageous embodiments of the invention in which the acrylate copolymer used within the crosslinked coating consists essentially of acrylic monomer, methacrylic monomer, and a copolymerized monomer forming intermolecular crosslinks. Support for this amendment can be found in the Application-as-filed, for example on Page 11, lines 15 through 20.

Claim 1 has further been amended to reflect that the recited comonomer forming intermolecular crosslinks is self-condensing. Support for this amendment can be found in the Application-as-filed, for example on Page 12, lines 20 through 24.

Claim 11 has been amended to reflect that the acrylic monomer within the recited coating is advantageously an alkyl acrylate, the methacrylic monomer is advantageously an alkyl methacrylate and the copolymerizable comonomer forming intermolecular crosslinks is advantageously selected from N-methylolacrylamide and N-methylolmethacrylamide. Support for this amendment can be found in the Application-as-filed, for example on Page 11, line 30 through Page 12, line 21.

Claim 21 has been amended to reflect that the acrylate copolymer included within the crosslinked coating advantageously consists essentially of methylmethacrylate comonomer; an alkyl acrylate comonomer selected from ethyl acrylate or butyl acrylate and a self-condensing copolymerized comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide. Support for this amendment can be found in the Application-as-filed, for example on Page 11, line 30 through Page 12, line 21.

Claim 22 has been added to complete the record for examination and highlight particularly advantageous embodiments of the invention.

Claim 22 is directed to advantageous crosslinked coatings consisting of (i) an acrylate copolymer comprising acrylate comonomer, methacrylate comonomer and a self-condensing comonomer forming intermolecular crosslinks, (ii) optional wetting agents; (iii) optional surfactants; (iv) optional pH regulators; (v) optional antioxidants; and (vi) optional dyes. Support for this amendment can be found in the Application-as-filed, for example on Page 11, line 30 through Page 12, line 21 and Page 13, lines 7 through 10.

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

The Claimed Invention is Patentable
in Light of the Art of Record

Claims 1 through 7, 9 through 15, and 17 through 21 stand rejected over European Patent Application 1 176 004 ("EP 004") in view of United States Patent Nos. 4,214,035 ("US 035"); 4,302,505 ("US 505") or 4,302, 506 ("US 506") (collectively referred to hereinafter as "the Heberger references" or "Heberger") and further in view of the Encyclopedia of Polymer Science ("Polymer Science"). Conversely, Claims 1 through 7, 9 through 15, and 17 through 21 stand rejected over the Heberger references in view of EP 004.

It may be useful to briefly consider the invention before addressing the merits of the rejection.

As noted in Applicants' Amendment of July 18, 2005, white-colored, biaxially oriented polyester films are known for use in lidding applications, such as yoghurt cup lids. Polyester

films are particularly attractive for such lidding applications because they can provide a smooth, shiny surface that is considered esthetically pleasing by the consumer.

Although aesthetically beneficial, the pigments incorporated into polyester films to impart color can detrimentally influence other properties. The more pigments and the larger the pigments incorporated into polyester films, the greater the risk of tearing and delamination of the lidding as the yoghurt package is being opened, for example. Titanium dioxide is known to have a relatively small particle diameter. Lidding film incorporating titanium dioxide as the sole pigment has thus been found to be less prone to tearing and delamination. The use of titanium dioxide alone is further known to provide a particularly smooth and shiny film surface. As noted above, such smooth surfaces are typically considered aesthetically pleasing by consumers.

Unfortunately, the smooth surfaces of such titanium dioxide filled films have a tendency to adhere to each other during film manufacturing, a phenomenon commonly referred to as "blocking." Titanium dioxide filled lidding films thus suffer from inferior winding performance. (The Examiner's attention is kindly directed to the Application-as-filed on Page 5, lines 13 – 19).

Various strategies to address blocking are known in the art. It is known to incorporate larger particles into polyester films to avoid blocking, for example. However, such larger particles introduce detrimental properties into the resulting lidding films, as noted above.

Surprisingly, Applicants have found that particular acrylic-based copolymer coatings impart advantageous slip properties to polyester films filled with titanium dioxide alone. More specifically, Applicants have surprisingly discovered that coatings formed from resin consisting essentially of acrylic, methacrylic and self-condensing comonomer impart a coefficient of sliding friction of less than 0.45 to the resulting film surface.

Accordingly, the claims are directed to white, biaxially oriented polyester film having a base layer B that includes pigment and/or filler consisting essentially of titanium dioxide. The claimed films have an R value smaller than 43 daN/mm^2 and an e_{max} ratio of less than 2.5. At least one of the two surfaces of the film has been provided with a continuous, crosslinked coating. The coating is formed from resin consisting essentially of (i) acrylic monomer, (ii) methacrylic monomer and (iii) self-condensing monomer forming intermolecular crosslinks. Altogether unexpectedly, the claimed films exhibit a coefficient of sliding friction of less than 0.45 in the absence of antiblocking agents within the coating.

In particularly advantageous embodiments, the inventive films are coated with acrylate copolymer that includes (i) an alkyl acrylate, (ii) an alkyl methacrylate and (iii) copolymerizable comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 11.

In further beneficial aspects of such advantageous embodiments, the inventive films are coated with acrylate copolymer consisting essentially of (i) alkyl acrylate selected from ethyl acrylate or butyl acrylate, (ii) a recited amount of methylmethacrylate and (iii) self-condensing comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 21.

In further advantageous embodiments, the inventive films are coated with coatings consisting of (i) an acrylate copolymer comprising acrylate comonomer, methacrylate comonomer and a self-condensing comonomer forming intermolecular crosslinks, (ii) optional wetting agents; (iii) optional surfactants; (iv) optional pH regulators; (v) optional antioxidants; and (vi) optional dyes, as recited in Claim 22.

EP 004 does not teach or suggest the claimed invention.

EP 004 is generally directed to lidding films. EP 004 teaches that its films may have an R value of up to 45 daN/mm^2. (Paragraph 0010). In contrast to the claimed invention, EP 004 notes a broad range of particulate fillers as suitable for use within its films, including comparatively large fillers such as calcium carbonate. (Claim 8). EP 004 discloses a mixture of fillers within its initial working example. (Paragraphs 0065 – 0067). EP 004 merely broadly notes that its films may be coated to improve adhesion to subsequent coatings or to provide improved antistatic properties. (Paragraph 0044).

Applicants respectfully reiterate that EP 004 does not teach or suggest the claimed invention.

EP 004, noting R values of up to 45 daN/mm^2 as acceptable, does not teach or suggest the recited films having a maximum R value of 43 daN/mm^2.

EP 004, broadly noting the use of coatings, also does not teach or suggest film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a crosslinked continuous coating that includes an acrylate copolymer consisting essentially of acrylic monomer, methacrylic monomer and a copolymerized self-condensing comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a sliding coefficient of friction of less than 0.45.

Nor does EP 004 teach or suggest advantageous inventive film coated with acrylate copolymer that includes (i) an alkyl acrylate, (ii) an alkyl methacrylate and (iii) copolymerizable comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 11.

EP 004 thus likewise fails to teach or suggest the beneficial inventive films coated with acrylate copolymer consisting essentially of (i) alkyl acrylate selected from ethyl acrylate or butyl

acrylate, (ii) a recited amount of methylmethacrylate and (iii) self-condensing comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 21.

And EP 004 most certainly does not teach or suggest the advantageous inventive films coated with a composition consisting of (i) an acrylate copolymer comprising acrylate comonomer, methacrylate comonomer and a self-condensing comonomer forming intermolecular crosslinks, (ii) optional wetting agents; (iii) optional surfactants; (iv) optional pH regulators; (v) optional antioxidants; and (vi) optional dyes, as recited in Claim 22.

Accordingly, Applicants respectfully submit that Claims 1 through 7, 9 through 15, and 17 through 22 are patentable in light of EP 004, considered either alone or in combination with the remaining art of record.

Polymer Science does not cure the deficiencies in EP 004.

Polymer Science is merely an encyclopedic reference generically directed to polyester films. Polymer Science broadly teaches that coatings may be applied to "alter the surface characteristics of the film." (Page 207, first full paragraph). Polymer Science further discloses that such coatings may be used to impart slip or adhesion to the film. (Page 201, first full paragraph and Page 209, second and third paragraphs). Polymer Science is altogether silent as to specific coating compositions used to impart such properties, however.

Applicants thus likewise respectfully reiterate that Polymer Science, generically noting the use of coatings, does not teach or suggest the claimed invention.

Polymer Science more particularly does not teach or suggest the recited film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a coating incorporating an acrylate copolymer consisting essentially of acrylic monomer, methacrylic monomer and a copolymerized self-condensing comonomer forming

intermolecular crosslinks, in which the coated side(s) of the film exhibits a sliding coefficient of friction of less than 0.45.

Nor does Polymer Science, broadly noting the use of coatings, teach or suggest the advantageous inventive films coated with acrylate copolymer that includes (i) an alkyl acrylate, (ii) an alkyl methacrylate and (iii) copolymerizable comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 11.

Polymer Science thus likewise fails to teach or suggest the beneficial inventive films coated with acrylate copolymer consisting essentially of (i) alkyl acrylate selected from ethyl acrylate or butyl acrylate, (ii) a recited amount of methylmethacrylate and (iii) self-condensing comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 21.

And Polymer Science most certainly does not teach or suggest the advantageous inventive films coated with a coating consisting of (i) an acrylate copolymer comprising acrylate comonomer, methacrylate comonomer and a self-condensing comonomer forming intermolecular crosslinks, (ii) optional wetting agents; (iii) optional surfactants; (iv) optional pH regulators; (v) optional antioxidants; and (vi) optional dyes, as recited in Claim 22.

The Heberger references do not cure the deficiencies within EP 004 and Polymer Science.

In contrast to the claimed white films, the Heberger references are directed to transparent films, such as used in microfilm. (US 035; Col. 1, lines 20 – 50; US 505, Col. 1, lines 25 – 56; US 506; Col. 1, lines 20 - 50). The films in Heberger are coating with a composition requiring (i) stearamidopropyldimethyl-β-hydroxyethylammonium nitrate ("nitrate") and (ii) a specific methylacrylamide-containing terpolymer. (US 035, Col. 2, lines 31 – 40; US 505, Col. 2, lines 36 – 46; US 506; Col. 2, lines 25 - 35) The nitrate, present at a minimum 2.75:1 (nitrate:terpolymer) weight ratio, appears to form the majority of the coating solids. (US 035,

Col. 5, lines 1 – 5; US 505, Col. 5, lines 7 – 11; US 506; Col. 4, lines 64 - 68) In addition to the foregoing components, Heberger further discloses the incorporation of a separate, extraneous crosslinking agent. In particular, Heberger indicates that the methylacrylamide is crosslinked using melamine formaldehyde. (US 035, Col. 5, lines 58 – 59; US 505, Col. 5, lines 62 – 63; US 506; Col. 5, lines 60 - 62) Heberger expressly refers to his particular coating constituents as "critical." (US 035, Col. 1, lines 67 – 68; US 505, Col. 2, lines 4 – 6; US 506; Col. 1, lines 64 - 67).

Applicants respectfully submit that Heberger, directed to transparent films, does not teach or suggest the recited white films that include pigment and/or filler consisting essentially of titanium dioxide.

Nor does Heberger, directed to a specific coating composition, teach or suggest the recited titanium dioxide filled film coated with an acrylate copolymer composition consisting essentially of acrylic monomer, methacrylic monomer and comonomer forming intermolecular crosslinks. Heberger instead teaches away from the recited coatings by requiring a specific composition with "critical" components that include both nitrate and methylacrylamide.

And Heberger most certainly does not teach or suggest the recited films coated with an acrylic/methacrylic copolymer which is crosslinked using a self-condensing monomer. Heberger instead teaches away from the recited self-condensing monomer by including a separate crosslinking agent (as would be required to react with his "critical" methylacrylamide).

Heberger, providing a specific coating with "critical" constituents, thus does not teach or suggest the advantageous films of the invention coated with acrylate copolymer that includes (i) an alkyl acrylate, (ii) an alkyl methacrylate and (iii) copolymerizable comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 11.

Heberger thus likewise fails to teach or suggest the beneficial films of the invention coated with acrylate copolymer consisting essentially of (i) alkyl acrylate selected from ethyl acrylate or butyl acrylate, (ii) a recited amount of methylmethacrylate and (iii) self-condensing comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 21.

And Heberger most certainly does not teach or suggest the advantageous films of the invention coated with a coating consisting of (i) an acrylate copolymer comprising acrylate comonomer, methacrylate comonomer and a self-condensing comonomer forming intermolecular crosslinks, (ii) optional wetting agents; (iii) optional surfactants; (iv) optional pH regulators; (v) optional antioxidants; and (vi) optional dyes, as recited in Claim 22. As noted above, Heberger expressly requires nitrate within his coatings.

Applicants respectfully submit that there would have been no motivation to have combined the cited references. Applicants respectfully submit that merely because the references can be combined is not enough, there must still be a suggestion. MPEP 2143.01 (section citing Mills). EP 004 is directed to white films used in lidding. Heberger is directed to transparent films used in microfilm. These are altogether different endeavors, to say the least.

Applicants respectfully submit that polyester films suitable for one application will not automatically work in another application, as each application has its own unique requirements. Therefore, a film for one application may not suggest a solution for another application.

However, even if Applicants had combined the cited references (which they did not), the claimed invention would not result. EP 004 discloses lidding films having an R value of up to 45. Polymer Science merely generically notes that coatings may be used to alter the surface characteristics of films. Heberger is directed to transparent films having a specific coating whose "critical" constituents include both a particular nitrate and methylacrylamide, as well as a separate crosslinker.

Consequently, even if the art of record were combined (which, again, should not be done), the recited films having a maximum R value of 43 daN/mm^2 and a coating that includes an acrylate copolymer consisting essentially of acrylic monomer, methacrylic monomer and a self-condensing comonomer forming intermolecular crosslinks would not result.

Nor would the combination result in the advantageous inventive films coated with acrylate copolymer that includes (i) an alkyl acrylate, (ii) an alkyl methacrylate and (iii) self-condensing comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 11.

The combination likewise fails to result in the beneficial inventive films coated with acrylate copolymer consisting essentially of (i) alkyl acrylate selected from ethyl acrylate or butyl acrylate, (ii) a recited amount of methylmethacrylate and (iii) self-condensing comonomer selected from N-methylolacrylamide and N-methylolmethacrylamide, as recited in Claim 21.

And the combination most certainly does not result in the advantageous inventive films coated with a coating consisting of (i) an acrylate copolymer comprising acrylate comonomer, methacrylate comonomer and a self-condensing comonomer forming intermolecular crosslinks, (ii) optional wetting agents; (iii) optional surfactants; (iv) optional pH regulators; (v) optional antioxidants; and (vi) optional dyes, as recited in Claim 22.

Accordingly, Applicants respectfully submit that Claims 1 through 7, 9 through 15 and 17 through 22 are patentable in light of EP 004, Polymer Science and Heberger, considered either alone or in combination.

Consideration of Previously Submitted Information Disclosure Statement

It is noted that an initialed copy of the PTO/SB/08A that was submitted with Applicants' Information Disclosure Statement filed January 12, 2005 has not been returned to Applicants'

representative with the Office Action. Accordingly, it is requested that an initialed copy of the PTO/SB/08A form be forwarded to the undersigned with the next communication from the PTO. In order to facilitate review of the references by the Examiner, a copy of the Information Disclosure Statement and the PTO/SB/08A form are attached hereto. Copies of the cited references were provided at the time of filing the original Information Disclosure Statement, and, therefore, no additional copies of the references are submitted herewith. Applicants will be pleased to provide additional copies of the references upon the Examiner's request if it proves difficult to locate the original references.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1 through 7, 9 through 15 and 17 through 22 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,

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